

Claims

1. Dental isolation material, containing:
 - 10 - 60 wt.-% water
 - 30 - 85 wt.-% C₂-C₄ alcohol
 - 2 - 10 wt.-% polyvinyl alcohol and
 - 0 - 30 wt.-% acetone
2. Dental isolation material according to claim 1, containing:
 - 40 - 50 wt.-% water
 - 45 - 55 wt.-% C₂-C₄ alcohol
 - 3 - 8 wt.-% polyvinyl alcohol
 - 0 - 15 wt.-% acetone
3. Dental isolation material according to either one of claims 1 and 2, characterized in that the C₂-C₄ alcohol is ethanol.
4. Dental isolation material according to any one of claims 1 to 3, characterized in that the polyvinyl alcohol has a molecular mass greater than 60,000 g/mol.
5. Dental kit, containing at least one isolating material according to any one of claims 1 to 4.
6. Dental kit according to claim 5, characterized in that a transparent dental investment material is used, containing:
 - 10 - 30 wt.-% polyethylene glycol dimethacrylate,
 - 40 - 55 wt.-% polymethyl methacrylate,
 - 5 - 15 wt.-% highly disperse silicon dioxide
 - < 1 wt.-% photoinitiators, stabilizers,
 - 0 - 10 wt.-% polyethylene glycol and
 - 10 - 30 wt.-% of at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
7. Dental kit according to either one of claims 5 and 6, characterized in that a transparent dental investment material is used, containing:
 - 15 - 20 wt.-% polyethylene glycol dimethacrylate,
 - 50 wt.-% polymethyl methacrylate
 - 10 - 13 wt.-% of at least one compound from the group, urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
 - 10 wt.-% highly disperse silicon dioxide,
 - 0.4 - 0.6 wt.-% photoinitiators, stabilizers and
 - 5 - 10 wt.-% polyethylene glycol.

8. Dental kit according to either one of claims 6 to 7, characterized in that the polyethylene glycol dimethacrylate has a molecular mass greater than 500 g/mol.
9. Dental kit according to any one of claims 6 to 8, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately $T = +20^{\circ}\text{C}$.
10. Dental kit according to any one of claims 6 to 9, characterized in that the polymethyl methacrylate has a molecular mass greater than 160,000, an average grain size of 80 - 140 μm and a benzoyl peroxide content less than 0.1 wt.-%.
11. Dental kit according to any one of claims 6 to 10, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to 10 wt.-% of comonomers.
12. Dental kit according to any one of claims 6 to 11, characterized in that the polyethylene glycol is fluid at a temperature of approximately $T = +20^{\circ}\text{C}$ and has an average molecular mass of ≥ 200 g/mol.
13. Dental kit according to any one of claims 6 to 12, characterized in that the urethane dimethacrylate has a minimum molecular mass at the level of 450 g/mol.
14. Dental kit according to any one of claims 6 to 13, characterized in that the polymethyl methacrylate is in the form of suspension polymerizate.
15. Dental kit according to any one of claims 6 to 14, characterized in that a dental material hardenable by electromagnetic radiation is used as dental plastic.
16. Method for making a prosthesis, characterized in that at least one isolation material according to any one of claims 1 to 4 is used.
17. Method for making a prosthesis by the following steps:
 - a.) Overmodeling a dental trial fitting with an investment material to create an individual flask or rim.
 - b.) Curing the investment material by electromagnetic radiation,
 - c.) Coating the inside of the polymerized investment material with an isolating material according to any one of claims 1 to 4,
 - d.) Pouring a dental plastic into the individual flask or rim and
 - e.) Deflasking by shattering the investment material.

18. Method according to any one of claims 16 to 17, characterized in that a transparent dental investment material is used, containing:
 - 10 - 30 wt.-% polyethylene glycol dimethacrylate,
 - 40 - 55 wt.-% polymethyl methacrylate,
 - 5 - 15 wt.-% highly disperse silicon dioxide,
 - < 1 wt.-% photoinitiators, stabilizers,
 - 0 - 10 wt.-% polyethylene glycol and
 - 10 - 30 wt.-% of at least one compound from the group urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,
19. Method according to any one of claims 16 to 18, characterized in that a transparent investment material is used, containing:
 - 15 - 20 wt.-% polyethylene glycol dimethacrylate,
 - 50 wt.-% polymethyl methacrylate
 - 10 - 15 wt.-% at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,
 - 10 - 13 wt.-% highly disperse silicon dioxide,
 - 0.4 - 0.6 wt.-% photoinitiators, stabilizers, and
 - 5 - 10 wt.-% polyethylene glycol.
20. Method according to any one of claims 17 to 19, characterized in that the polyethylene glycol dimethacrylate has a molecular mass > 500 g/mol.
21. Method according to any one of claims 17 to 20, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately $T = + 20^{\circ}\text{C}$.
22. Method according to any one of claims 17 to 21, characterized in that the polymethylene methacrylate has a molecular mass of > 160,000, an average grain size of 80 - 140 μm and a benzoyl peroxide content < 0.1 wt.-%.
23. Method according to any one of claims 17 to 22, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to 20 wt.-% comonomers.
24. Method according to any one of claims 17 to 23, characterized in that the polyethylene glycol is fluid at a temperature of approximately $T = + 20^{\circ}\text{C}$ and has an average molecular mass of ≥ 200 g/mol.
25. Method according to any one of claims 17 to 24, characterized in that the urethane dimethacrylate has a minimum molecular mass at the level of 450 g/mol.
26. Method according to any one of claims 17 to 25, characterized in that the polymethyl

methacrylate is in the form of suspension polymerizate.

27. Method according to any one of claims 17 to 26, characterized in that a dental material curable by means of electromagnetic radiation is used as dental plastic.
28. Method according to any one of claims 17 to 27, characterized in that retentions are set up after carving and before coating.
29. Use of an isolating material according to any one of claims 1 to 4 for making a total or partial prosthesis.
30. Prosthesis, characterized in that it is made by a method of claims 16 to 28.
31. Method for making a prosthesis, characterized in that at least one isolating material according to any one of claims 1 to 4 is used, and at least one investment material containing:
 - 10 - 30 wt.-% polyethylene glycol dimethacrylate,
 - 40 - 55 wt.-% polymethyl methacrylate,
 - 5 - 15 wt.-% highly disperse silicon dioxide
 - < 1 wt.-% photoinitiators, stabilizers,
 - 0 - 10 wt.-% polyethylene glycol and
 - 10 - 30 wt.-% of at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA.
32. Method according to claim 31, characterized in that a transparent dental investment material is used, containing:
 - 15 - 20 wt.-% polyethylene glycol dimethacrylate,
 - 50 wt.-% polymethyl methacrylate
 - 10 - 15 wt.-% at least one compound from the group: urethane dimethacrylate, bis-GMA, ethoxylated bis-GMA,
 - 10 - 13 wt.-% highly disperse silicon dioxide,
 - 0.4 - 0.6 wt.-% photoinitiators, stabilizers, and
 - 5 - 10 wt.-% polyethylene glycol.
33. Method according to either one of claims 31 and 32, characterized in that the polyethylene glycol dimethacrylate has a molecular mass > 500 g/mol.
34. Method according to any one of claims 31 to 33, characterized in that the polyethylene glycol dimethacrylate is solid at a temperature of approximately $T = + 20^{\circ}\text{C}$.

35. Method according to any one of claims 31 to 34, characterized in that the polymethyl methacrylate has a molecular mass of $> 160,000$, an average grain size of $80 - 140 \mu\text{m}$ and a benzoyl peroxide content $< 0.1 \text{ wt.-%}$.
36. Method according to any one of claims 31 to 35, characterized in that the polymethyl methacrylate is a copolymer which has been made with up to 10 wt.-% comonomers.
37. Method according to any one of claims 31 to 36, characterized in that the polyethylene glycol is fluid at a temperature of approximately $T = +20^\circ\text{C}$ and has an average molecular mass of $\geq 200 \text{ g/mol}$.
38. Method according to any one of claims 31 to 37, characterized in that the urethane dimethacrylate has a minimum molar mass at the level of 450 g/mol .
39. Method according to any one of claims 31 to 38, characterized in that the polymethyl methacrylate is in the form of a suspension polymerizate.
40. Method according to any one of claims 31 to 39, characterized in that a dental material curable by means of electromagnetic radiation is used as dental plastic.
41. Method according to any one of claims 31 to 40, characterized in that retentions are set up after the overmodeling and before the coating.
42. Use of an isolation material according to any one of claims 1 to 4 as isolation against dentin in the direct making of impressions for inlays by means of carving plastics in the mouth.
43. Use of an isolation material according to any one of claims 1 to 4 as isolation against plaster of Paris in carving work for inlays, onlays or crowns.
44. Use of an isolation material according to any one of claims 1 to 4 as protection for polymerized plastic against unpolymerized material in add-ons or repairs, especially for the avoidance of crazing on prosthesis teeth by monomers.